2010

Wisconsin Energy Statistics

Highlights

Wisconsin Office of Energy Independence

Acknowledgements

Wisconsin's State Energy Office, the Office of Energy Independence, has produced the annual ***Wisconsin Energy Statistics*** publication since 1976. This publication serves as a foundation for evaluating energy activities and trends in Wisconsin.

The Wisconsin Office of Energy Independence relies on many organizations, agencies and private businesses for the information needed to compile the statistics in this report. They include the Wisconsin Division of the American Automobile Association, the U.S. Department of Agriculture/National Agriculture Statistics Service, the U.S. Department of Commerce, and the U.S. Department of Energy/Energy Information Administration, Wisconsin's electric and gas utilities and the Public Service Commission of Wisconsin, the Wisconsin Departments of Administration; Agriculture Trade and Consumer Protection; Commerce; Workforce Development; Natural Resources; Revenue; and Transportation. Private businesses that have contributed data toward this publication include airport fixed base operators, Focus on Energy, landfill and wastewater treatment facilities, railroads, schools, and natural gas pipelines.

In producing this publication, overall leadership and guidance were provided by OEI's Executive Director, Judy Ziewacz. Holly Laux O'Higgins was responsible for natural gas, petroleum and transportation data, U.S. data, renewable energy, and expenditures. She also coordinated production of this publication. Jim Mapp prepared coal data and provided expertise from years of experience working with energy data. O'Higgins and Mapp worked together on electricity and energy efficiency data. The design and layout of this publication was created by Kari Hamann Design in Madison, Wisconsin.

Picture 1
The wind turbines are owned and operated by We Energies and are located at Blue Sky Green Field Wind Energy Center in Fond du Lac County. www.we-energies.com/environmental/bluesky_greenfield.htm. The photo is courtesy of We Energies.

Picture 2
Pellets made from biomass represent Wisconsin's biggest opportunity for renewable energy for all economic sectors. Photo courtesy of the Biomass Energy Resource Center.

Picture 3
The photo is of the Kingsford hydroelectric project, located on the Menominee River in Florence County, Wisconsin and Dickinson County, Michigan, with installed capacity of 7,200 kilowatts. Photo courtesy of We Energies.

Picture 4
The United Community Center's (UCC) 13-kilowatt, fixed-rack solar electric system includes more than 70 solar panels on the roof of the main administration building. The panels produce more than 16,000 kilowatt-hours each year. Students of Bruce-Guadalupe Community School at UCC can track energy savings online. The photo is courtesy of UCC.

Picture 5
The grazing cows represent an energy source compliments of Wisconsin's Dairy State status—cow manure. Manure digesters create methane burned to create electricity. Photo courtesy of the Wisconsin Farm Bureau Federation.

Picture 6
The vehicle being refuelled with E85 ethanol represents Wisonsin's largest home-grown contribution to renewable transportation fuels. Photo courtesy of the Office of Energy Independence.

This publication is available online at www.energyindependence.wi.gov

2010 Wisconsin Energy Statistics

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Green Sector Makes "Green" for Wisconsin

Wisconsin has no natural gas, no coal, and no oil. Every year, we send $12.5 billion out of state to power our homes, businesses and fuel our cars. Fortunately, through the efforts of the Wisconsin Office of Energy Independence, more of these dollars remain in-state resulting in economic growth, job creation and reduced dependence on imported fuels.

Since the inception of the Wisconsin Office of Energy Independence in 2007, significant progress has been made to: capture 10 percent of the emerging renewable energy and bioindustry market in Wisconsin by 2030; generate 25 percent of power and 25 percent of transportation fuels from renewable resources by 2025; and make Wisconsin a national leader in alternative energy research, with the assistance of Wisconsin's four-year university and technical college system.

In 2009, OEI received $55 million in American Recovery and Reinvestment Act, State Energy Program funding to help Wisconsin businesses become more energy-efficient, assist factories to retool their lines to produce green energy products, and for the creation/retention of jobs. The funding definitely stimulated Wisconsin's economy—by leveraging more than $145 million in private investments and creating/retaining more than 5,400 jobs in the state.

Plus, the growing number of green energy manufacturers and products, has increased the number of people trained in green technology production, installation and maintenance—a long-term investment in Wisconsin's green job sector.

When it comes to research, Wisconsin is on-track to becoming a leader. The Wisconsin Energy Institute (WEI) is currently under construction on the University of Wisconsin-Madison campus. The WEI will house the Wisconsin Bioenergy Institute, the Great Lakes Bioenergy Research Center, and will have space designated for alternative fuel research. In fact, the work conducted at WEI will unlock the potential of cellulosic biofuels, a clean renewable transportation fuel that could one day replace fossil fuels.

Wisconsin is reducing its dependence on imported fuels, increasing investments in business efficiencies and putting the people of this great state to work. The green sector is making "green" for the state of Wisconsin.

Businesses participating in the program include:

- **Montchevre´-Betin** in Belmont installed a whey and waste water digester.
- **Frito-Lay** in Beloit installed a biomass boiler.
- **Helios USA** in Milwaukee manufactures photovoltaic panels.
- **Idle Free Systems** in Watertown manufactures hybrid idling technology.
- **Orion Energy Systems** in Manitowoc produces large-scale solar generation.
- **Renewegy** in Oshkosh manufactures mid-size 20 kW wind turbines.
- **Sun Power Biodiesel** in Cumberland expanded their biodiesel production.
- **ZBB** in Menomonee Falls produces advanced batteries.

Harvesting Energy Along Wisconsin's Roads

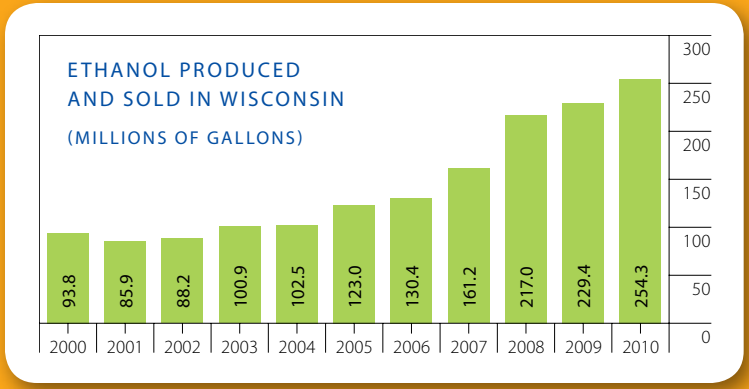
THE DITCHMASS PROJECT IS BEING UNDERTAKEN BY TWO AREA FARMERS, JAMIE DERR AND ROBERT DERR, THE FATHER-AND-SON OWNERS OF DERR SOLARMASS, LLC. THE PROJECT IS CURRENTLY IN OPERATION ALONG A THREE-MILE STRETCH OF HIGHWAY 151, BETWEEN SUN PRAIRIE AND COLUMBUS.

Grasses and weeds growing along highways and county roads are a common sight in Wisconsin. This plant growth is a costly hassle to maintain. However, depending on the results of a pilot project being jointly funded by Wisconsin's Office of Energy Independence and Department of Transportation, it could become a source of energy and revenue. Ditchmass, as these crops have been nicknamed, could potentially contribute to the state's usable biomass without competing for space with existing food crops.

A total of 35 large bales were harvested in November yielding approximately 2.07 tons/acre or 5.6 tons/mile. Core samples were taken from the bales and submitted for energy and chemical analysis. If this project is successful, the practice could be expanded to roadways around the state, adding to Wisconsin's biomass and biofuels production and creating a new revenue stream.

Biofuels Production

Biofuels production in Wisconsin has soared since 2002. Wisconsin is 9th in the nation in ethanol production. In 2010, of the 254.3 million gallons of ethanol sold in Wisconsin, 80.4 percent was produced in Wisconsin. Also in 2010, 94.7 percent of all gasoline sold in the state was blended with at least 10 percent ethanol. Wisconsin is home to four biodiesel production facilities producing an estimated 8 million gallons in 2010.



Conserve Wisconsin —

LEADERSHIP IN ENERGY EFFICIENCY &

Leadership in Energy and Environmental Design (LEED) Ratings of State Facilties

LEED—Leadership in Energy and Environmental Design—is a green building program that is an internationally recognized system for providing third-party verification that a building was designed , built and maintained using strategies aimed at improving performance in energy savings, water efficiency, CO_2 emissions reduction, improved indoor environmental quality, among other metrics.

LEED uses a rating system to classify different levels of efficiency. From most to least efficient, the ratings are: Platinum, Gold, Silver and Certified and covers new construction (NC) and existing buildings operations and maintenance (EBOM).

Twenty-three state building projects are under evaluation for a LEED-NC Silver or higher rating, as well as two existing state buildings (LEED-EBOM): the DNR headquarters in Madison and the state office building in LaCrosse.

Overall Energy Performance

The 71.5 million gross square feet owned and leased by the State of Wisconsin saw a 10 percent energy reduction in Btu/GSF for the period of July 1, 2009 through June 30, 2010. The reduction uses a baseline set during the July 1, 2004 to June 30, 2005 period. The University of Wisconsin–Green Bay was a high achiever with a 30 percent gross energy reduction.

Renewable Energy

The Division of State Facilities (DSF) has purchased 10 percent, 92,400 MWhs, of the state's electricity from renewable sources allowing the State of Wisconsin to be an EPA Green Power Partner. In December 2010, the state added another 64,000 MWh from the new Shirley Wind Farm, increasing the state's renewable energy purchase to 16 percent of overall electricity purchases. Construction of this new wind farm generated approximately 200 local jobs.

PHOTO COURTESY OF MADISON GAS & ELECTRIC.

Other renewable energy efforts in state facilities include:

- 10 kW solar photovolatic system on the State Capitol and a solar hot water system at the Executive Residence.
- 25 kW solar photovolatic system at the University of Wisconsin–Parkside and 30 kW solar photovolatic system at State Fair Park.
- Solar hot water systems installed at two correctional institutions and an additional four solar hot water systems are planned for the University of Wisconsin–Oshkosh.
- DSF is studying the development of a large wind project at the University of Wisconsin–River Falls and a small anaerobic digester at the University of Wisconsin–Platteville.

THE GOAL OF CONSERVE WISCONSIN IS TO WORK WITH STATE AGENCIES AND THE UW SYSTEM TO MAXIMIZE ENERGY EFFICIENCY AND RENEWABLE ENERGY APPLICATIONS AT THEIR FACILITIES. THE ENERGY EFFICIENCY EFFORTS DESCRIBED HERE ARE INCLUDED ANNUALLY IN THE *STATE ENERGY USE REPORT* WHICH TRACKS STATE AGENCY ENERGY USE BACK TO 1973.

RENEWABLE ENERGY IN STATE FACILITIES

Sustainable Facilities Standards

DSF developed and implemented Sustainable Facilities Standards which mirror LEED – Leadership in Energy and Environmental Design with additional Wisconsin priorities such as the use of forest products. To keep staff current on the new Sustainable Facilities Standards, DSF conducted statewide training for all state agency staff. Agency staff will use an electronic worksheet to support its new Standards, which also require commissioning for all state projects.

Performance Contracting

To date, performance contracting is projected to save $9 million—450,000 MMBtu and 37 million kWh annually. Efforts include:

- Lighting and steam trap upgrades at 79 state armories to save $300,000 in annual energy costs.
- The University of Wisconsin–Madison has a six-phase approach to upgrading existing buildings and is projected to save $5.7 million in annual energy costs.
- The University of Wisconsin–Milwaukee will upgrade 10 buildings for a projected annual energy savings of $1.35 million.
- The University of Wisconsin–Oshkosh is planning multiple building upgrades for an estimated savings of $195,000.

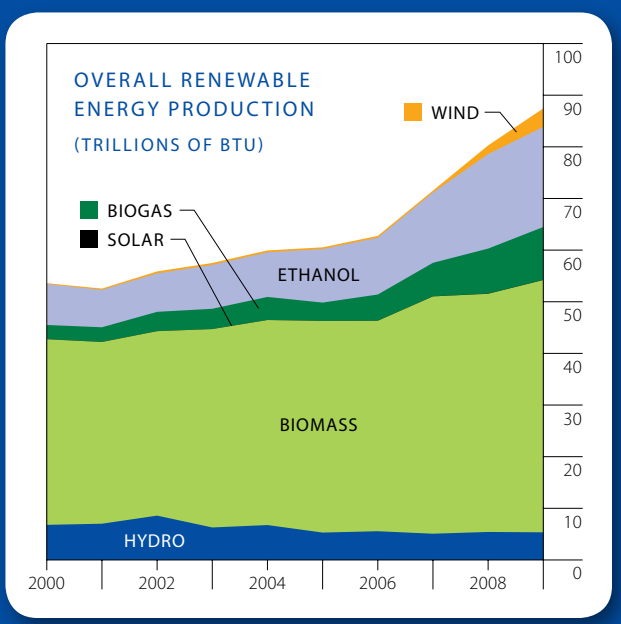
Other Energy Efficiency Projects

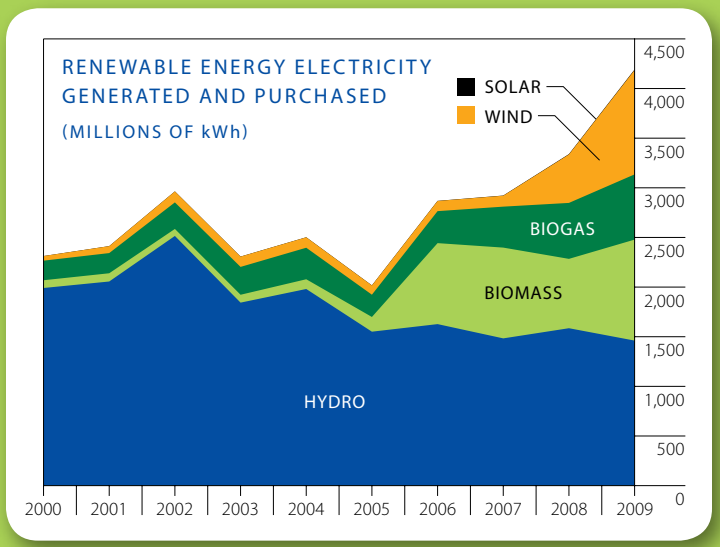
Additional energy efficiency efforts include:

- The PC Energy Management Software implemented at DOA resulted in a 10 percent reduction in computer electrical consumption, approximately $4,000 per year in savings.
- All the lighting in the State Capitol and the Governor's Residence was converted to Compact Fluorescent Lighting (CFLs), and motion sensors were installed in DOA parking garages.

Total Renewable Energy Use in Wisconsin

Total renewable energy use in Wisconsin has grown rapidly in the last 10 years. Even though Wisconsin has no coal, oil, or natural gas, our state does have cropland, fields, and forests from which we can develop energy sources, creating jobs in our state. In 2009, Wisconsinites spent almost $18.7 billion on energy, of which an estimated $12.5 billion left the state. By investing in our own energy supplies, Wisconsin will keep more of those energy dollars, and the jobs that come with it.





Wisconsin's Renewable Electricity Production

In 2009, Wisconsin's generation of electricity from renewable sources increased by 25.5 percent over 2008, approximately 6.36 percent of total electric sales in the state. The primary renewable energy source is hydropower (34.8 percent), followed by wind (25.1 percent), biomass (24.3 percent), biogas (15.7 percent) and solar (0.1 percent).

Shining New Light into Milwaukee's Menomonee Valley

HELIOS SOLAR PANEL MANUFACTURING FACILITY

With help from a $1 million low-interest ARRA loan, Helios USA officially opened the first mono-crystalline solar panel factory in Wisconsin, placing the 21st-century industry on the map for Wisconsin.

Even before its manufacturing facility was up and running, Helios had a receptive market locally, nationally and internationally. Here in Wisconsin, Convergence Energy—which is building a solar project in Walworth County—contracted with Helios for their panels. Plus, other regional and national companies placed orders for panels even before the doors opened. In fact, the global market for solar panels is so strong, that nearly half of all U.S.-built panels in 2009 and 2010 went overseas.

Helios' solar panels are made with high-impact tempered glass, meaning they are able to withstand a hailstone up to 1.5 inches in diameter. The panels also use super mono-crystalline solar cells, high performance technology that is appropriate for residential, commercial, industrial, and utility-based solar electric system applications. The panels are available in two sizes that can generate either 250 or 300 watts. Later this year, the company will produce a panel that generates 400 watts.

HELIOS SOLAR WORKS

HELIOS IS PROUD TO BE BREATHING NEW LIFE INTO MILWAUKEE'S MENOMONEE VALLEY—A THRIVING MEAT PROCESSING AND PACKING STOCKYARD IN THE LATE 1800s—AND TO USHER IN HIGH QUALITY, CLEAN ENERGY JOBS TO THE MARKET. CURRENTLY, 18 PEOPLE WORK IN THE MANUFACTURING FACILITY, AND HELIOS ANTICIPATES 50 FULL-TIME EMPLOYEES WILL BE ON BOARD ONCE THE SITE IS FULLY OPERATIONAL.

Renewegy Makes Wind Energy a Breeze

In 2010, Oshkosh-based Renewegy, introduced an innovative commercial wind turbine to the renewable energy market and the Wisconsin landscape.

With help from a $500,000 loan from the U.S. Department of Energy's State Energy Program (SEP), administered by the Wisconsin Office of Energy Independence and the Wisconsin Department of Commerce, Renewegy has placed itself on the leading edge of wind turbine technology. What makes the Renewegy commercial turbine unique is its ability to be installed in a more urban environment such as in front of a business, school, university or farm to generate on-site power. Plus, the turbine never needs a crane. Instead, an advanced hydraulic system is able to raise and lower the 115-foot tower within eight minutes, saving costs and making installation and maintenance less complicated.

This convenience and high visibility is drawing interest from many Wisconsin businesses who want to illustrate their environmental commitment. SCA Tissue, JJ Keller & Associates, Bergstrom Automotive and Orion Energy Systems have installed Renewegy's wind turbines during the second half of 2010. Plus, an additional 13 units are scheduled for installation in northeastern Wisconsin.

This investment in renewable energy is leading to sales and more jobs for Wisconsin. In fact, two-year old Renewegy has grown to employ 16 workers and sources a majority of their components from Wisconsin suppliers who are benefiting from the growth in renewable energy.

Improving Air Quality One Fleet at a Time

To improve air quality in the ozone non-attainment area in southeastern Wisconsin, the Wisconsin Clean Transportation Program (WCTP) is funding 16 alternative fuel transportation projects in the region worth more than $12 million.

The 16 projects located in Milwaukee, Waukesha, Ozaukee, Kenosha and Sheboygan counties consist of purchasing light-duty and heavy-duty alternative fuel vehicles such as: diesel hybrid-electric; plug-in hybrid-electric; compressed natural gas; propane and E85. In Milwaukee County, 35 light-duty hybrid vehicles are now on the road and are projected to save more than 4,400 gallons of petroleum, reduce 130 tons of greenhouse gas emissions and save more than $14,000 in refueling costs per year.

By deploying more fuel-efficient and alternative fueled vehicles into the region, two of the primary sources that contribute to poor air quality—gasoline vapors and vehicle exhaust—will diminish. Plus, by replacing fossil-fuel vehicles with cleaner technology, the region is reducing its reliance on petroleum, supporting American jobs and saving money.

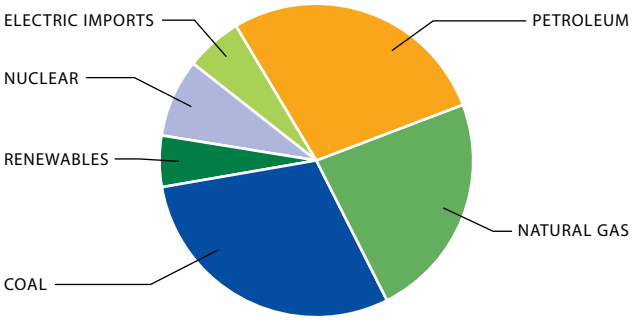
Wisconsin Resource Energy Consumption

Resource energy consumption decreased by 4.8 percent in 2009. Resource energy includes all energy resources used to generate electricity, including the energy content of the coal, petroleum, nuclear and renewable fuels.

TOTAL RESOURCE ENERGY CONSUMPTION: 1,681.1 TRILLION BTU

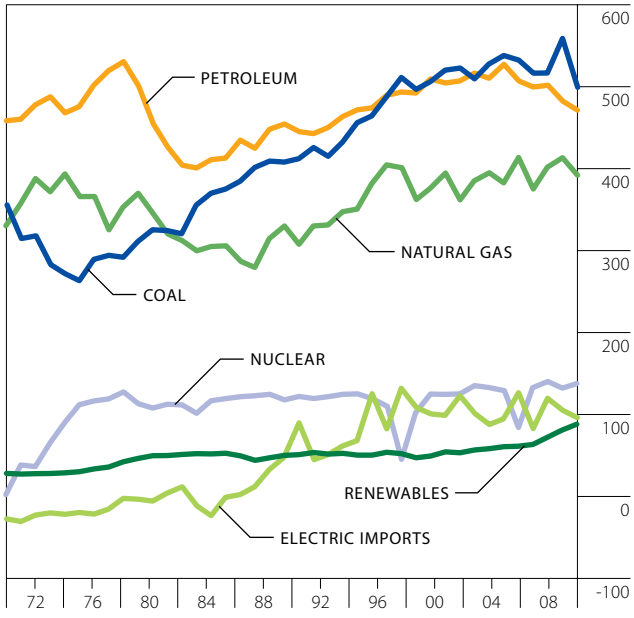
By Type of Fuel

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Type of Fuel	2009 Trillions of Btu	2009 Percent of Total
Renewables	87.4	5.2%
Electric Imports	95.5	5.7%
Nuclear	137.0	8.1%
Natural Gas	391.4	23.3%
Petroleum	470.8	28.0%
Coal	499.0	29.7%

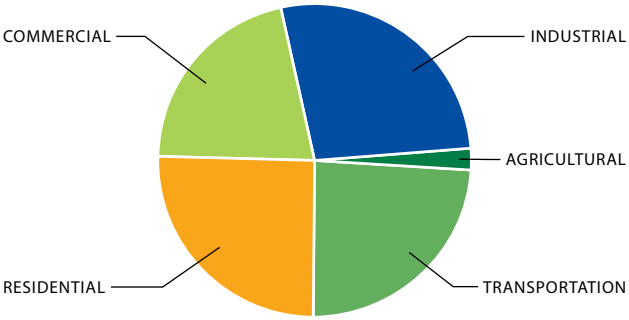
1970-2009 TRILLIONS OF BTU



Source: Wisconsin Office of Energy Independence.

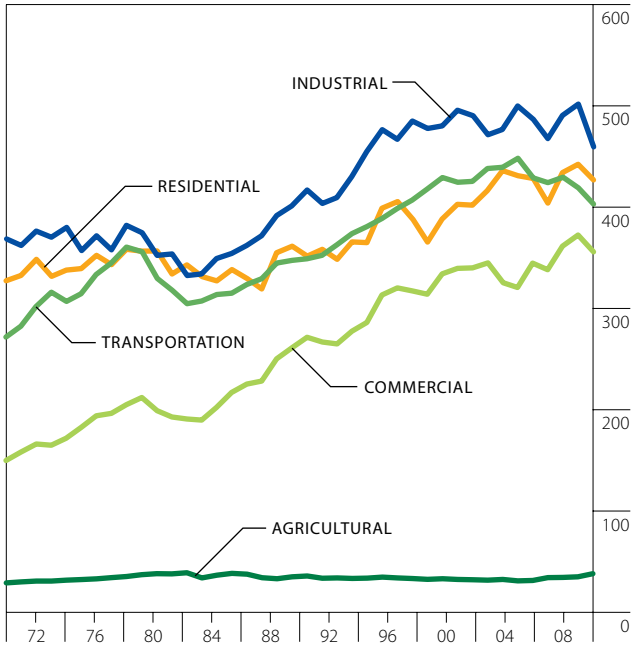
By Economic Sector

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Economic Sector	2009 Trillions of Btu	2009 Percent of Total
Agricultural	37.5	2.2%
Commercial	355.4	21.1%
Transportation	402.6	23.9%
Residential	426.4	25.4%
Industrial	459.3	27.3%

1970-2009 TRILLIONS OF BTU



Source: Wisconsin Office of Energy Independence.

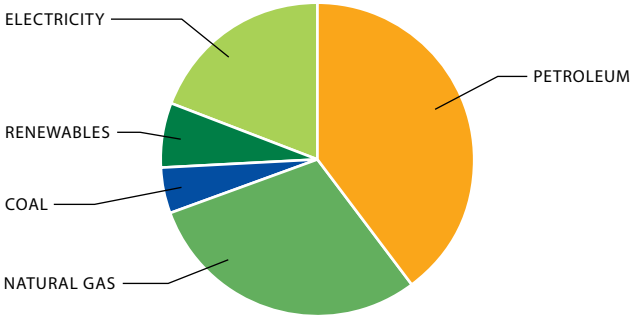
Wisconsin End-Use Energy Consumption

End-use energy increased by 4.0 percent overall in 2009. End-use energy is a measure of the energy content of fuels at the point of consumption.

TOTAL END-USE ENERGY CONSUMPTION: 1,177.3 TRILLION BTU

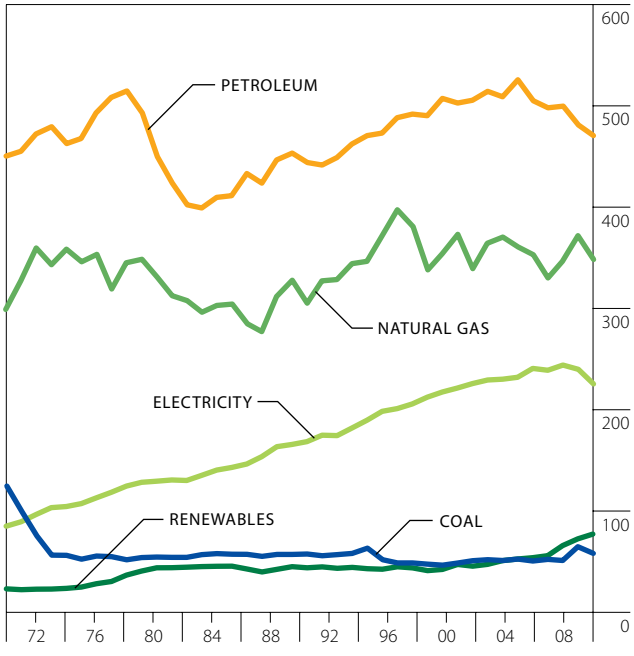
By Type of Fuel

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Type of Fuel	2009 Trillions of Btu	2009 Percent of Total
Coal (non-utility)	57.6	4.9%
Renewables	76.6	6.5%
Electricity	225.0	19.1%
Natural Gas	348.0	29.6%
Petroleum	470.1	39.9%

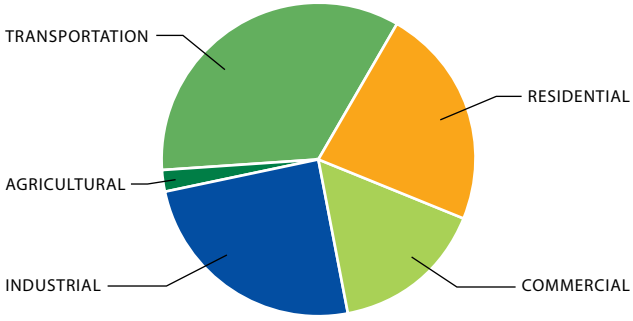
1970-2009 TRILLIONS OF BTU



Source: Wisconsin Office of Energy Independence.

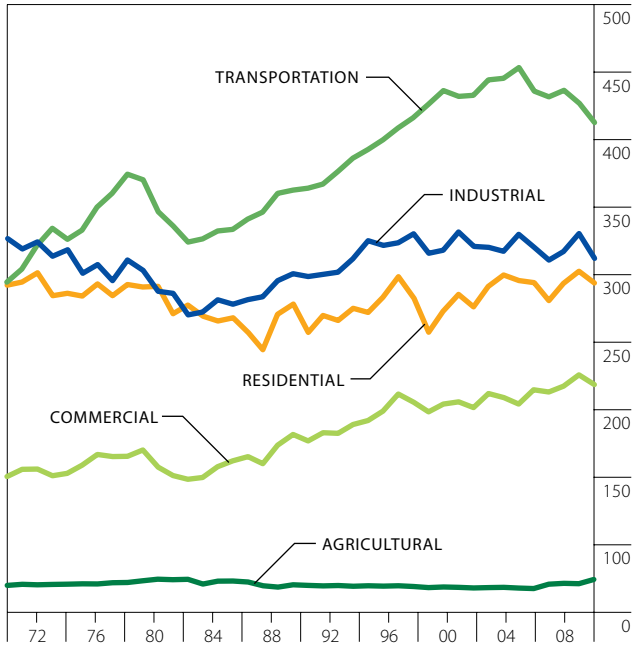
By Economic Sector

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Economic Sector	2009 Trillions of Btu	2009 Percent of Total
Agricultural	26.5	2.2%
Commercial	186.9	15.9%
Residential	270.5	23.0%
Industrial	290.9	24.7%
Transportation	402.6	34.2%

1970-2009 TRILLIONS OF BTU



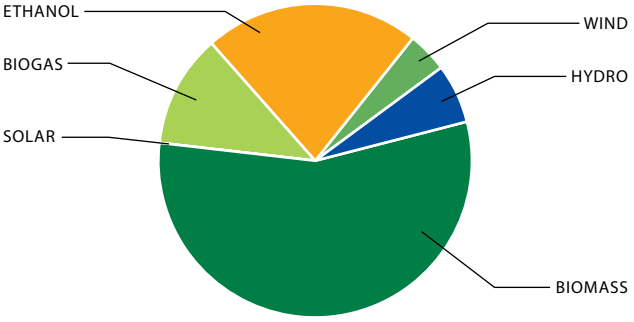
Source: Wisconsin Office of Energy Independence.

Wisconsin Renewable Energy Production

Overall renewable energy use in Wisconsin increased 8.9 percent in 2009. Renewable energy production includes *all* renewable energy used in Wisconsin for generating electricity and for other applications that displace fossil fuels (e.g., space heating, transportation fuel).

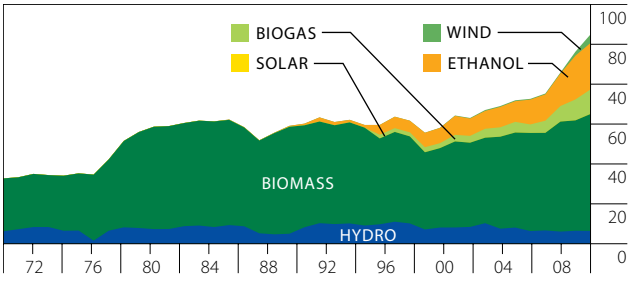
By Type of Fuel

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



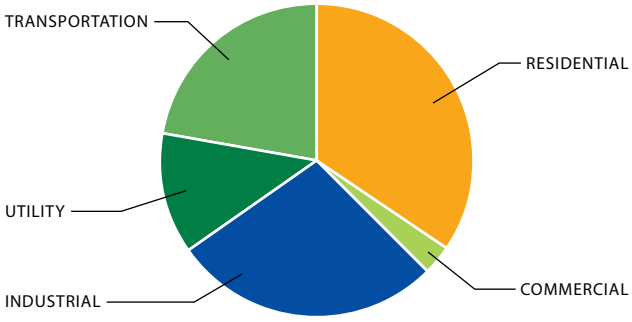
Type of Fuel	2009 Trillions of Btu	2009 Percent of Total
Solar	0.035	0.0%
Wind	3.6	4.1%
Hydro	5.4	6.1%
Biogas	10.2	11.7%
Ethanol	19.4	22.2%
Biomass	48.9	55.9%

1970-2009 TRILLIONS OF BTU



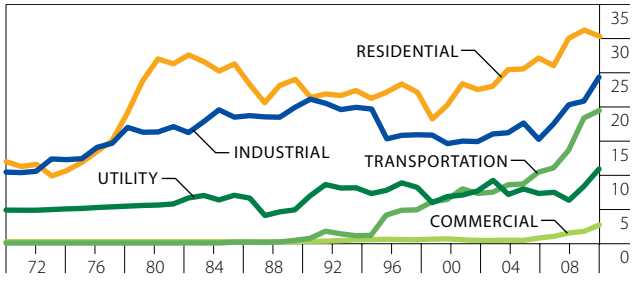
By Economic Sector

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Economic Sector	2009 Trillions of Btu	2009 Percent of Total
Commercial	2.7	3.0%
Utility	10.9	12.4%
Transportation	19.4	22.2%
Industrial	24.3	27.8%
Residential	30.2	34.6%

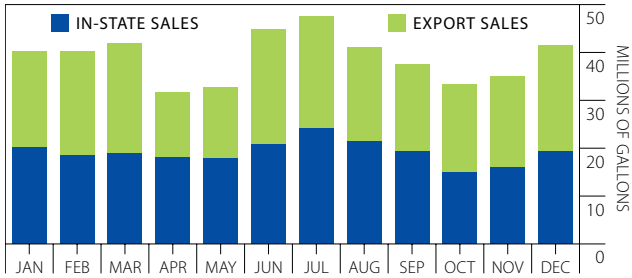
1970-2009 TRILLIONS OF BTU



Ethanol Production in Wisconsin

Ethanol use in the transportation sector increased 5.8 percent. Ethanol, a renewable energy resource primarily distilled from corn, is used as an oxygenate in reformulated gasoline and in the blending of E10 (10 percent ethanol, 90 percent gasoline) and E85 (85 percent ethanol, 15 percent gasoline). Ethanol is Wisconsin's sole exported fuel.

2009 ETHANOL SALES BY WISCONSIN PRODUCERS



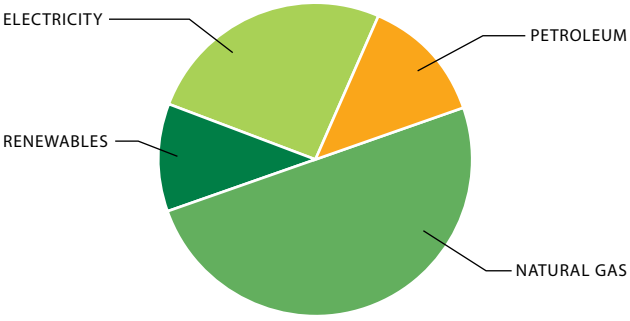
Source: Wisconsin Office of Energy Independence.

Wisconsin Residential Energy Use

Residential resource energy consumption decreased 3.4 percent while end-use consumption decreased 3.3 percent. Natural gas is the dominant fuel used in Wisconsin homes—natural gas use decreased 5.3 percent. Electricity use per customer decreased 2.6 percent. The decrease in natural gas relates to the decrease in Heating Degree Days (HDD) in 2009—a 3.4 percent decrease from 2008.

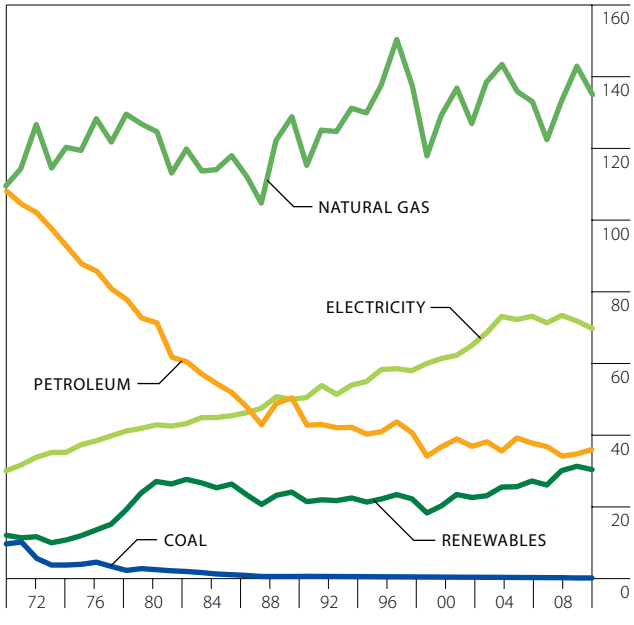
By Type of Fuel

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Type of Fuel	2009 Trillions of Btu	2009 Percent of Total
Coal (non-utility)	0.0	0.0%
Renewables[a]	30.2	11.2%
Petroleum	35.8	13.2%
Electricity	69.6	25.7%
Natural Gas	134.9	49.9%

1970-2009 TRILLIONS OF BTU

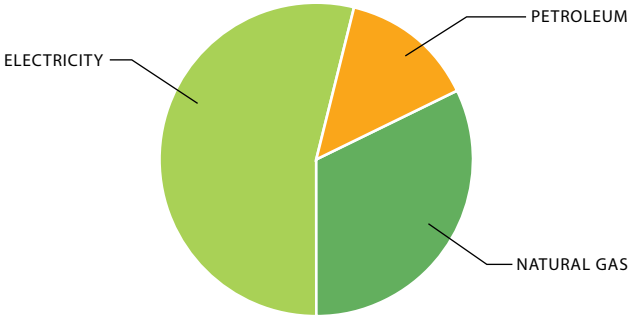


a Renewables includes wood, solar, wind and biogas.

Source: Wisconsin Office of Energy Independence.

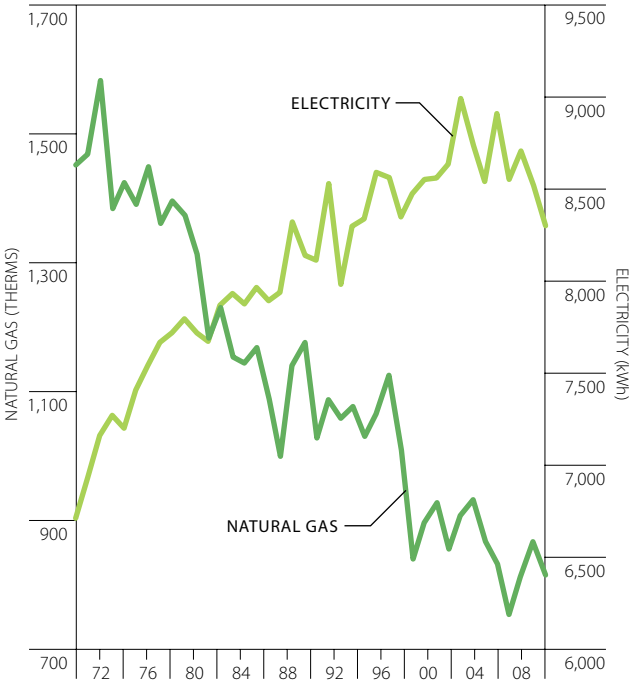
Expenditures and Per Customer Usage

2009 MILLIONS OF DOLLARS AND PERCENT OF TOTAL



Type of Fuel	2009 Millions of Dollars	2009 Percent of Total
Petroleum	630.7	14.0%
Natural Gas	1,448.8	32.1%
Electricity	2,428.4	53.9%

1970-2009 ELECTRICITY AND NATURAL GAS USE PER CUSTOMER



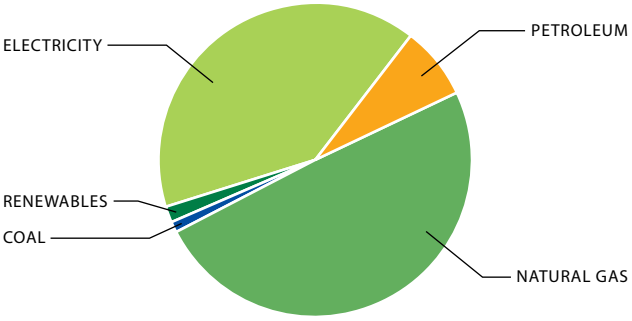
Source: Wisconsin Office of Energy Independence.

Wisconsin Commercial and Industrial Energy Use

Commercial sector end-use energy decreased 4.0 percent, while industrial sector end-use decreased 6.4 percent.
In the commercial and industrial sectors natural gas remains the major energy source,
providing 49.7 percent of commercial sector energy and 41.3 percent in the industrial sector.

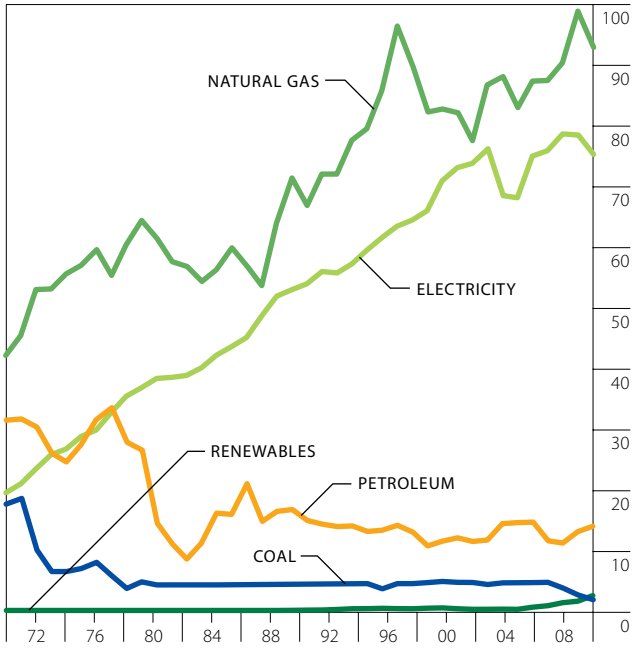
Commercial by Type of Fuel

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Type of Fuel	2009 Trillions of Btu	2009 Percent of Total
Coal (non-utility)	2.0	1.1%
Renewables	2.7	1.4%
Petroleum	14.1	7.5%
Electricity	75.3	40.3%
Natural Gas	92.9	49.7%

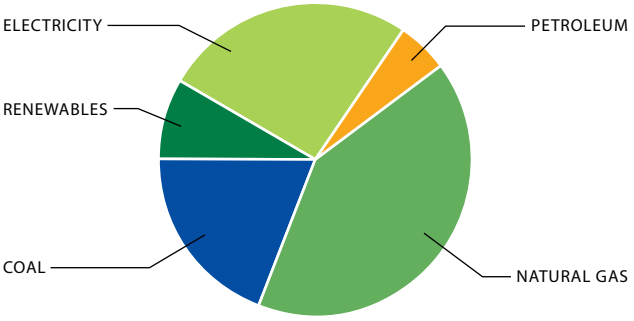
1970-2009 TRILLIONS OF BTU



Source: Wisconsin Office of Energy Independence.

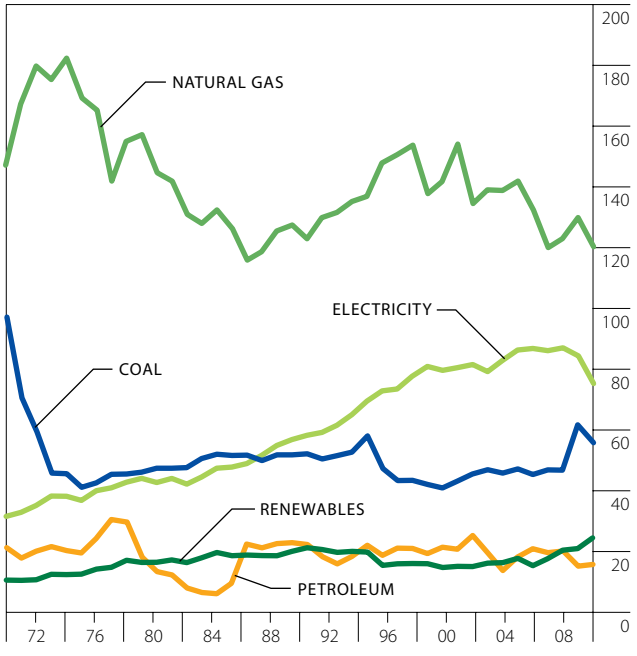
Industrial by Type of Fuel

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Type of Fuel	2009 Trillions of Btu	2009 Percent of Total
Petroleum	15.5	5.3%
Renewables	24.3	8.4%
Coal (non-utility)	55.7	19.1%
Electricity	75.2	25.8%
Natural Gas	120.2	41.3%

1970-2009 TRILLIONS OF BTU



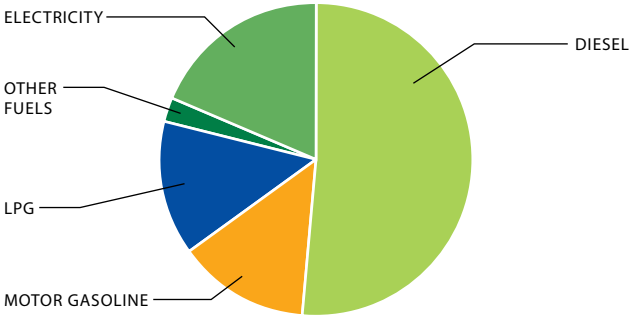
Source: Wisconsin Office of Energy Independence.

Wisconsin Agricultural and Transportation Energy Use

Agricultural end-use petroleum consumption increased 15.2 percent in 2009, while electricity decreased by 2.9 percent. Using 2009 dollars, the real, average statewide price of gasoline decreased by $0.915 a gallon, to $2.374 a gallon.

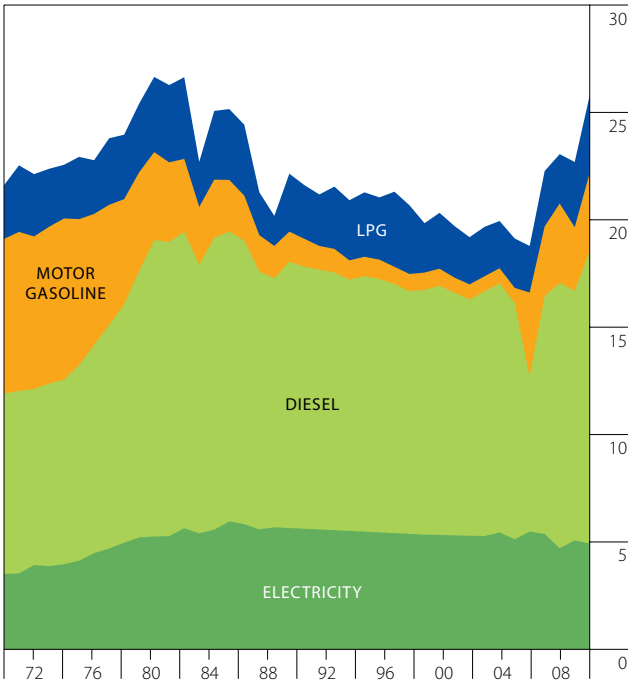
Agricultural by Type of Fuel

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Type of Fuel	2009 Trillions of Btu	2009 Percent of Total
LPG	3.6	13.6%
Motor Gasoline	3.7	14.0%
Electricity	4.9	18.6%
Diesel	13.6	51.5%

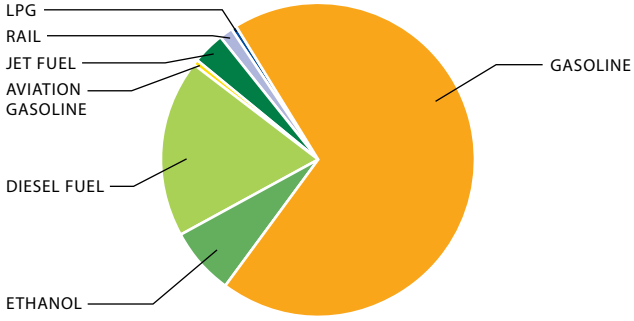
1970-2009 TRILLIONS OF BTU



Source: Wisconsin Office of Energy Independence.

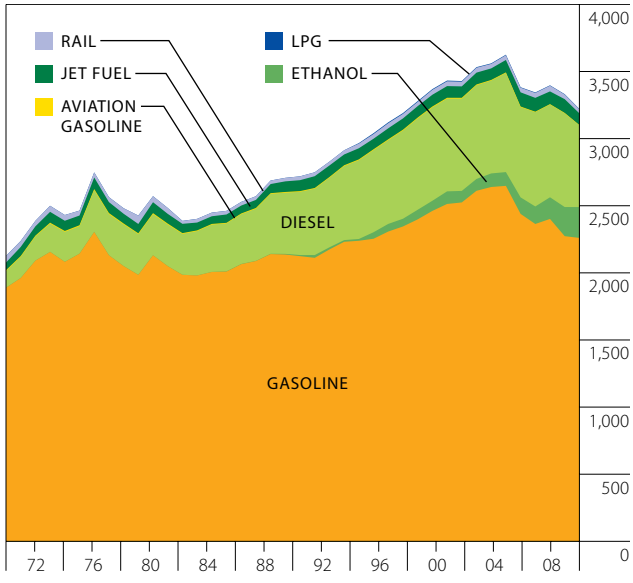
Transportation by Type of Fuel

2009 MILLIONS OF GALLONS AND PERCENT OF TOTAL



Type of Fuel	2009 Millions of Gallons	2009 Percent of Total
LPG	2.2	0.1%
Aviation Gasoline	2.4	0.1%
Rail	30.1	0.9%
Jet Fuel	87.0	2.7%
Ethanol	229.7	7.1%
Diesel Fuel	608.7	18.9%
Gasoline	2,260.3	70.2%

1970-2009 MILLIONS OF GALLONS



Source: Wisconsin Office of Energy Independence.

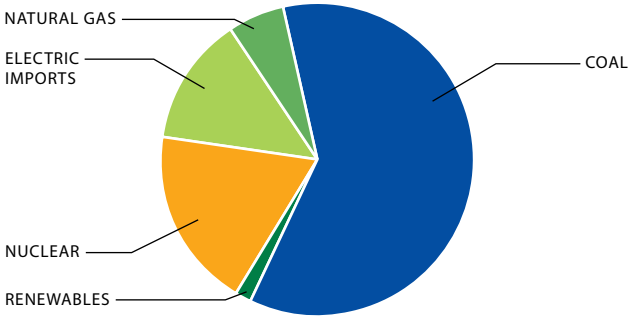
Wisconsin Energy Use for Electricity Generation and Electric Utility Sales

Wisconsin's energy use for electric generation decreased by 6.5 percent in 2009, while total electricity sales decreased 6.4 percent.

In 2009 electricity sales decreased in all sectors.

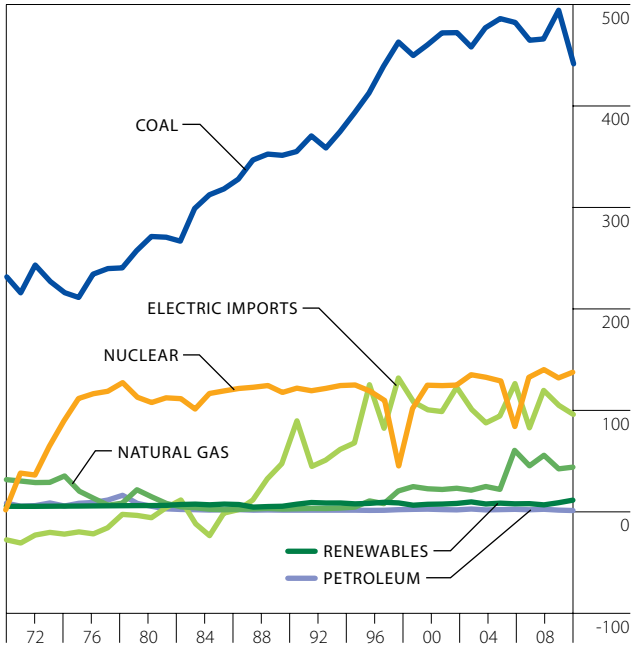
Energy Use for Electricity Generation by Type of Fuel

2009 TRILLIONS OF BTU AND PERCENT OF TOTAL



Type of Fuel	2009 Trillions of Btu	2009 Percent of Total
Renewables	10.9	1.5%
Natural Gas	43.4	6.0%
Electric Imports	95.5	13.1%
Nuclear	137.0	18.8%
Coal	441.4	60.6%

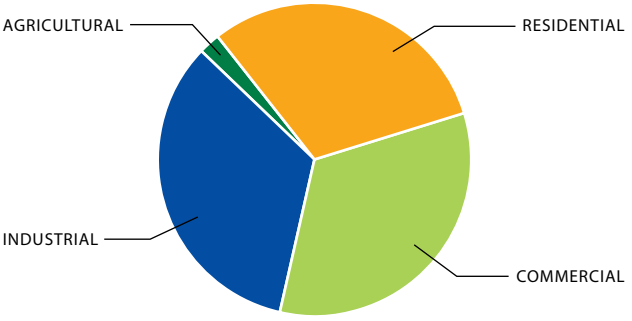
1970-2009 TRILLIONS OF BTU



Source: Wisconsin Office of Energy Independence.

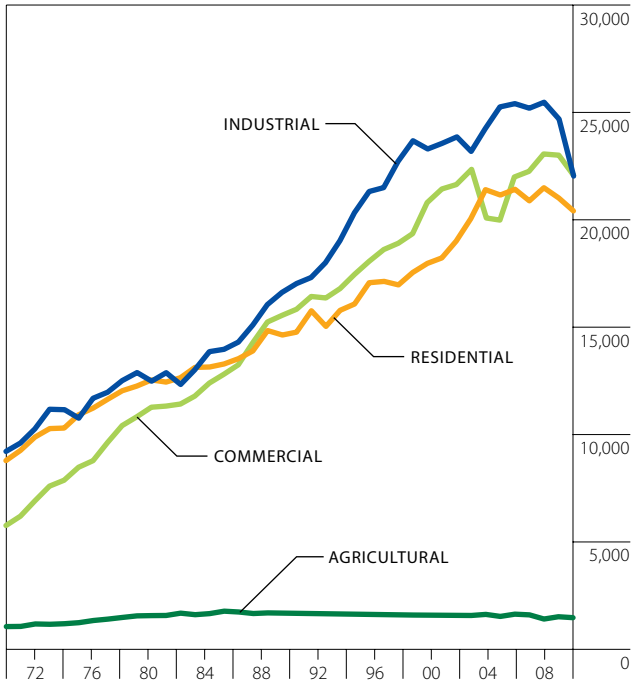
Electric Utility Sales by Economic Sector

2009 MILLIONS OF kWh AND PERCENT OF TOTAL



Economic Sector	2009 Millions of kWh	2009 Percent of Total
Agricultural	1,443	2.2%
Residential	20,390	30.9%
Industrial	22,029	33.4%
Commercial	22,055	33.5%

1970-2009 MILLIONS OF kWh



Source: Wisconsin Office of Energy Independence.

Wisconsin End-Use Energy Expenditures

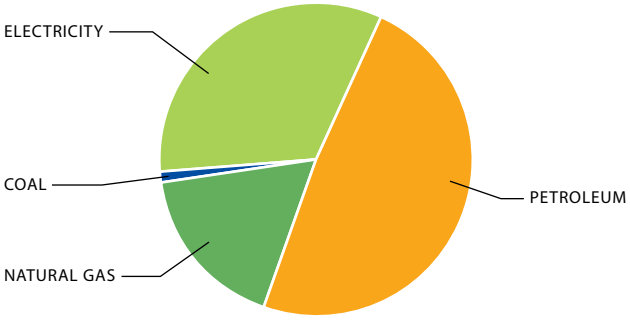
In 2009, Wisconsin's overall energy bill dropped by $5.19 billion (21.7 percent) from 2008.

Expenditures decreased for all fuels.

Since 2000, Wisconsin's total energy expenditures increased by $6.5 billion (53.5 percent increase).

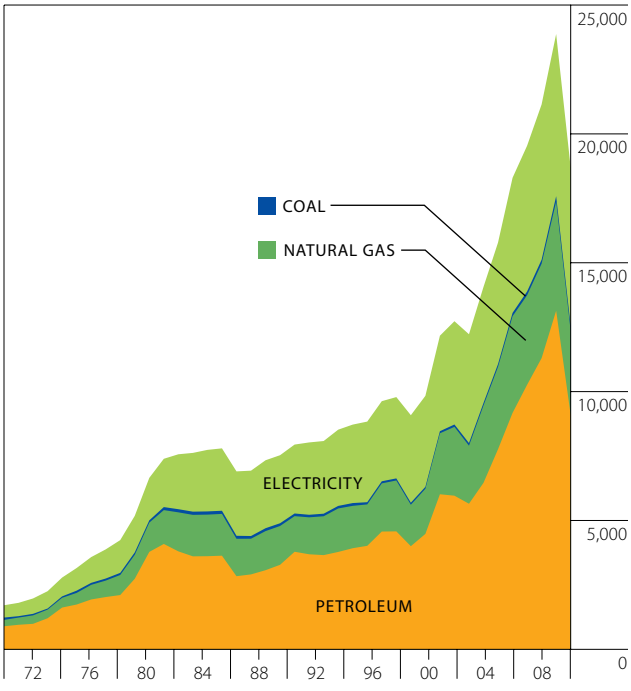
By Type of Fuel

2009 MILLIONS OF DOLLARS AND PERCENT OF TOTAL



Type of Fuel	2009 Millions of Dollars	2009 Percent of Total
Coal (non-utility)	200.0	1.1%
Natural Gas	3,254.2	17.4%
Electricity	6,136.7	32.8%
Petroleum	9,093.3	48.7%

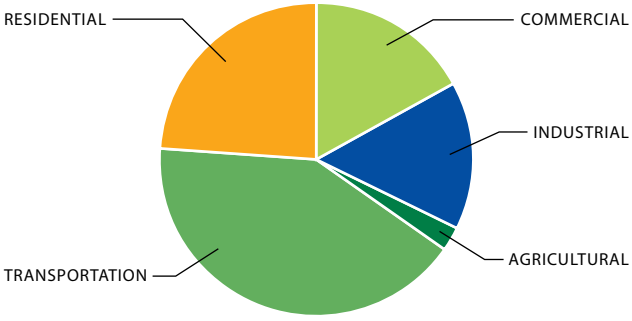
1970-2009 MILLIONS OF DOLLARS



Source: Wisconsin Office of Energy Independence.

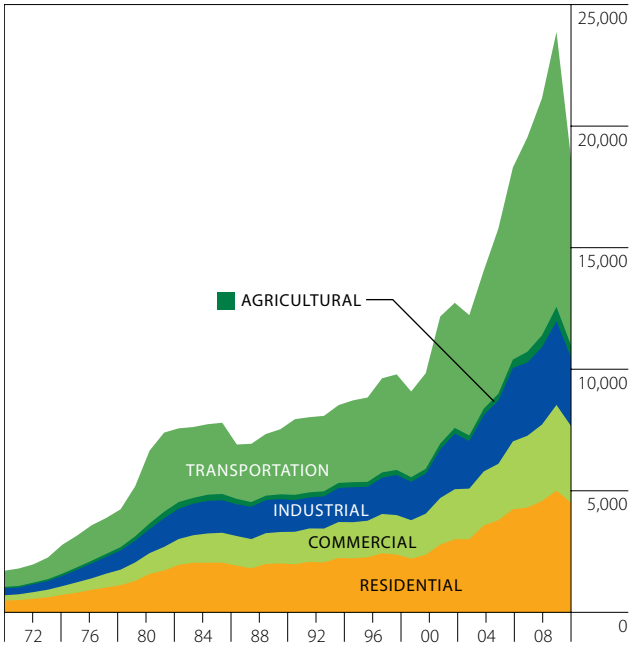
By Economic Sector

2009 MILLIONS OF DOLLARS AND PERCENT OF TOTAL



Economic Sector	2009 Millions of Dollars	2009 Percent of Total
Agricultural	494.2	2.6%
Industrial	2,825.4	15.1%
Commercial	3,154.3	16.9%
Residential	4,507.9	24.1%
Transportation	7,702.4	41.2%

1970-2009 MILLIONS OF DOLLARS



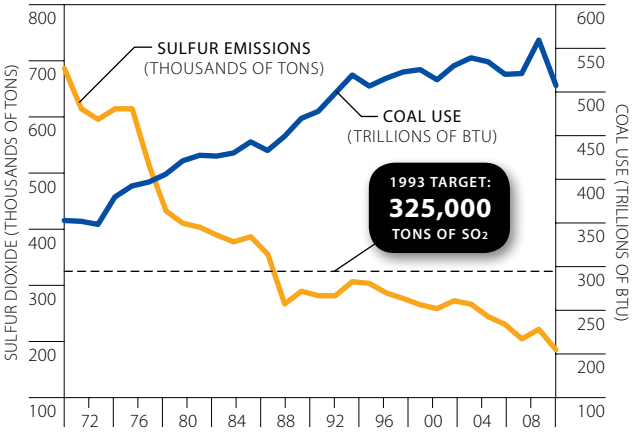
Source: Wisconsin Office of Energy Independence.

Wisconsin Emissions

Utility sulfur dioxide emissions decreased 18.9 percent from 2008 to 2009. SO_2 emissions are pollutants and are measured for air quality monitoring. CO_2 is a greenhouse gas which contributes to global warming. Wisconsin's CO_2 emissions from energy decreased 2.2 percent in 2009. Since 1990, total CO_2 emissions have increased 16.8 percent.

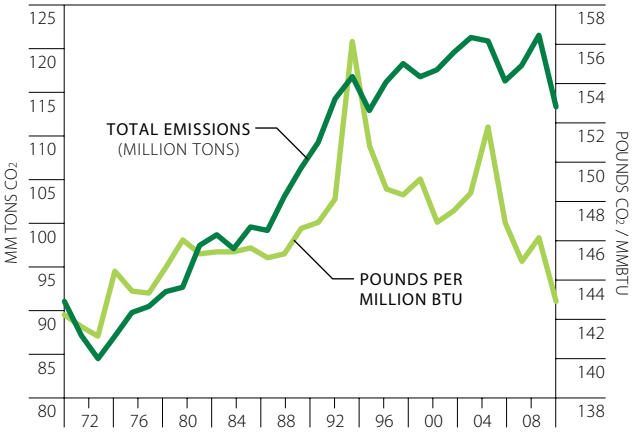
Sulfur Dioxide Emissions and Coal Use

1980-2009



Carbon Dioxide Emissions from Energy Use

1980-2009 MILLIONS OF TONS AND POUNDS PER MILLION BTU[a]



a Does not include electric imports.

Source: Wisconsin Office of Energy Independence.

2010 Transportation and Heating Fuels

Transportation Fuel Prices

Wisconsinites spent $9.5 billion[3] on transportation fuel in 2010, an increase of $1.7 billion over 2009. The increase in expenditures is due primarily to an increase in prices.

Transportation Fuels Prices per Gallon[1,2]	2009	2010
Gasoline	$2.374	$2.791
Diesel	$2.518	$3.032

Household transportation expenditure figures include a wide variety of transportation costs from the price of fuel at the pump and the price of heating fuels, to property taxes, and the delivery costs built into the price of household products.

Transportation Expenditures per Household	2009	2010
Annually	$3,369	$4,117
Monthly	$281	$343

Transportation Fuel Consumption

- Wisconsin used 70.15 million **more** gallons of gasoline than during 2009, an increase of 2.8 percent.

Transportation Fuels Consumed	2009	2010
Gasoline	2.52 billion gallons	2.59 billion gallons
Diesel	706.8 million gallons	744.8 million gallons

- Wisconsin used 38.0 million **more** gallons of diesel than during 2009, an increase of 5.4 percent.

Heating Fuels Prices

2010 saw increases in all fuel prices[4], including electricity and those used for space heating.

Fuel	% Change	2009 Price	2010 Price
Heating Oil	▲ 22.3%	$2.20 per gallon	$2.69 per gallon
LP Gas	▲ 3.9%	$1.78 per gallon	$1.85 per gallon
Natural Gas	▲ 3.3%	$7.91 per MMBtu	$8.17 per MMBtu
Residential Electricity	▲ 8.3%	$0.12 per kWh	$0.13 per kWh

Ethanol – E10 and E85 in Wisconsin

- Ethanol use in 2010 **increased** by 10.7 percent from 229.7 million gallons in 2009 to 254.3 million gallons in 2010.
- A larger percentage of Wisconsin's gasoline is mixed with ethanol. In 2010, 94.7 percent of Wisconsin's gasoline was an ethanol blend, compared to 90.5 percent in 2009.

1 From the American Automobile Association, Daily Fuel Gauge Report. http://www.fuelgaugereport.aaa.com/

2 This includes fuel usage in the agriculture sector, but does not include rail or aviation fuel.

3 2010 transportation expenditures were $7.2 billion for motor gasoline including ethanol and $2.3 billion for diesel fuel for a total of $9.5 billion.

4 All prices are statewide averages for the calendar year. Heating fuel and LP rates are gathered from fuel retailers across the state as part of an OEI telephone survey funded by the U.S. Department of Energy. Electricity price averages are compiled from rates reported to the Public Service Commission of Wisconsin. Natural gas rates are compiled from residential rates reported by Wisconsin's natural gas utilities.